

CHRONIC DISEASE COST CALCULATOR

USER GUIDE

Version 2

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Centers for Disease Control and Prevention (CDC)



Developed by RTI International^{*}



^{*} RTI International is a trade name of Research Triangle Institute.

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Background and Purpose

Chronic health diseases have been a leading public health concern in the U.S. for decades.¹ Chronic disease lowers quality of life and leads to increased medical expenditures. Previous studies have shown that a small number of chronic diseases account for a large share of annual U.S. medical spending.²

Medical expenditures for the treatment of chronic disease have financial impacts for taxpayers and the privately insured as well as those directly affected by the diseases. Taxpayers are affected by chronic disease costs in publicly funded health insurance programs such as Medicaid and Medicare. Medicaid, a program that provides health insurance for low-income families and those with disabilities, is publicly funded at the state and federal level. Medicare is a federally-funded program that provides health insurance for people age 65 or older, people under age 65 with certain disabilities, and people of all ages with End-Stage Renal Disease (permanent kidney failure requiring dialysis or a kidney transplant). The chronic disease medical expenditures of other persons also affect the privately insured through their impact on health insurance premiums.

In addition to medical costs, chronic disease leads to productivity loss through missed work time due to illness (absenteeism).³ Absenteeism from work affects both employers and employees. It is therefore important for policy makers to know not just the medical costs of chronic disease (direct costs) but also the productivity costs of chronic disease (indirect costs). However, quantifying these costs at the state level requires substantial resources and time.

The expanded Chronic Disease Cost Calculator (henceforth Cost Calculator) performs four primary functions:

1. Estimate medical expenditures at the state level separately by insured population for the following select chronic diseases:
 - Arthritis
 - Asthma
 - Cancer
 - Cardiovascular disease (CVD), including
 1. Congestive heart failure (CHF)
 2. Coronary heart disease (CHD)
 3. Hypertension
 4. Stroke
 5. Other heart diseases[†]
 - Depression
 - Diabetes

These diseases are among the most prevalent and/or costly chronic diseases.² Estimates of medical expenditures are provided for the entire state population (all payers, including the uninsured) and separately for Medicaid, Medicare, and private insurance.

2. Estimate absenteeism costs for the above chronic diseases at the state level.

[†] Other heart diseases includes rheumatic fever/rheumatic heart disease, diseases of mitral and aortic valves and other endocardial structures, acute and chronic pulmonary heart disease, acute and other pericardial and endocardial disease, cardiomyopathy, conduction disorders, cardiac dysrhythmias and ill-defined heart disease.

3. Allow the user to generate estimates of the costs of selected chronic diseases using customized inputs.
4. Project estimates of the medical costs of selected chronic diseases through 2020.

Intended Audience

The Cost Calculator was developed for chronic disease directors, state Medicaid directors, and other state and federal policy and decision makers to calculate estimates of the costs for selected chronic diseases. The purpose of creating this calculator is to help states estimate the costs of chronic disease in their state. The Cost Calculator may also be useful for federal agencies and others interested in reviewing the burden of chronic disease at the state level.

Intended Use

The intended use for the Cost Calculator is to provide estimates of medical expenditures and absenteeism costs due to select chronic diseases at the state level. Thus, the term “costs” as used in the Cost Calculator represents costs to each payer for medical services and costs to society due to absenteeism. Many states do not have the resources (financial and personnel) to conduct an analysis that will generate these estimates. Cost Calculator estimates can help policymakers quantify and understand the financial impact caused by chronic diseases, as well as inform decisions on investments in chronic disease prevention and disease management programs.

What the Cost Calculator Does

The Cost Calculator provides estimates for arthritis, asthma, cancer, cardiovascular disease (CHF, CHD, hypertension, stroke, and other heart diseases), depression, and diabetes at the state level of: 1) treated population by payer, 2) medical costs by payer; and 3) absenteeism costs for the total population. Because many people who suffer from chronic disease actually have two or more different chronic diseases, double-counting of the associated medical costs often occurs. The statistical analysis used to generate the cost estimates minimizes double-counting (i.e., overlap of disease costs) of payer dollars going to multiple diseases. Therefore, the costs of arthritis, asthma, cancer, CHF, CHD, stroke, other heart diseases and depression can be more easily compared across diseases. The cost estimates for hypertension and diabetes, however, include the costs of complications such as CHD, CHF and stroke. The costs of hypertension and diabetes are therefore not mutually exclusive of the costs of other reported diseases.

Users do not have to provide data on their own populations to use the Cost Calculator. For all payers represented, state-level data has been combined with nationally representative data to create sound estimates with no additional data required.

For users that have access to and resources for analyzing their own data (e.g., Medicaid claims), the Cost Calculator also allows users to input their own data in place of default estimates to generate total costs of the selected chronic diseases in their state.

What the Cost Calculator Does Not Do

The Cost Calculator does not provide exact medical and absenteeism costs of the chronic diseases for each state. All reported numbers are estimates and could differ from actual values. The uncertainty in the estimates arises from a number of factors: the combination of several data sources, different levels of geographic detail available in the source data, and the fact that the parameters of the statistical analysis are themselves estimates. Due to differences in data sources and methods, the estimates will not necessarily agree with other cost estimates.

The Cost Calculator is designed to provide the best possible estimates of the economic burden of certain chronic diseases by payer for each state. This involves using data from different levels of geographic detail for some states. Due to this and the lack of reported standard errors, the Cost Calculator is not designed for comparisons across states of the costs of chronic disease.

The Cost Calculator only estimates certain costs due to chronic disease: medical costs and absenteeism costs, through time away from paid work. Other costs of chronic disease, including productivity losses through presenteeism and premature mortality and reductions in the quality of life are not included in the estimates.

The Cost Calculator does not make policy or value judgments on the level of spending for chronic diseases. Instead, the Cost Calculator provides information describing present spending patterns and resource allocation, highlighting possible areas of cost savings through targeted prevention efforts or research into new treatments. As such, the Cost Calculator provides one of many inputs into a complicated decision-making process.

The Cost Calculator does not provide guidance for selecting or implementing prevention programs. However, the cost estimates are useful to aid decisions for resource allocation of prevention efforts.

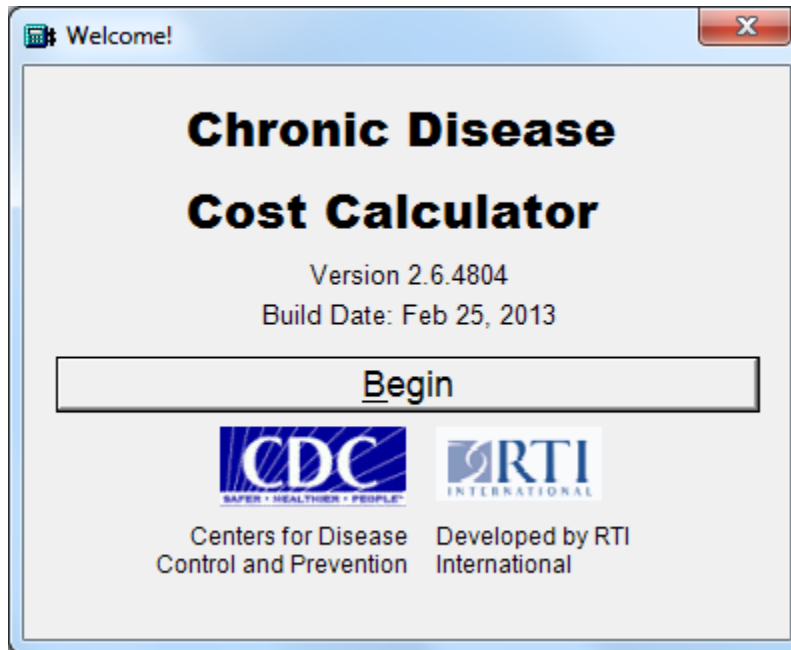
What is New in Version 2

The following features are new for Version 2 of the Cost Calculator:

- Inclusion of asthma, arthritis and depression
- Estimates of the medical costs of the selected chronic diseases to Medicare, private insurance, and all payers combined (including other payers such as TRICARE, out-of-pocket, the uninsured, etc.)
- Estimates of absenteeism costs for the selected chronic diseases at the state level
- Projections of estimates of the medical costs of selected chronic diseases through 2020.

Overview and Features

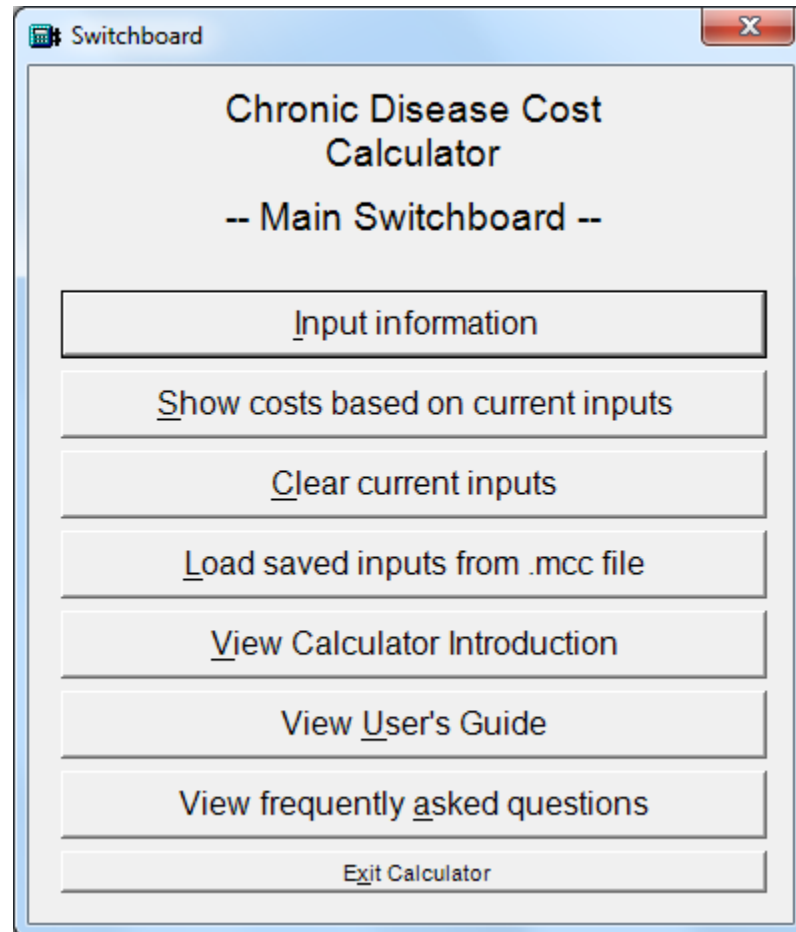
Users are guided through the calculator by a series of input screens. Default values, including the data source for these values, are provided for all inputs, which the user has the option to change. The inputs from each screen are then combined to generate estimates of the cost of selected chronic diseases. Users have the option to generate cost estimates by sex or by age category (0-17 years, 18-44, 45-64, and 65 and over) as well.



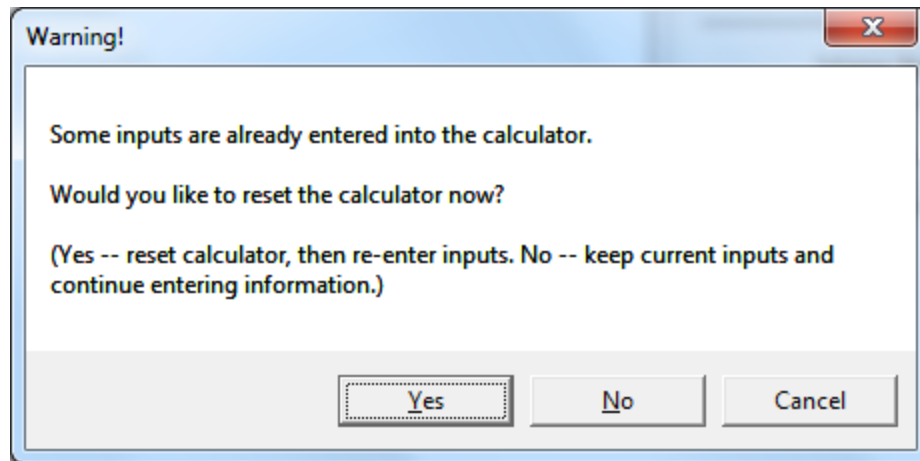
Using the Cost Calculator

Main Switchboard

After the Welcome screen and a brief Introduction, the user is taken to the main switchboard for the calculator.



The “Input information” button takes the user to the beginning of the process to input the data used by the calculator to generate cost estimates. This process is described below. If the user has already entered data, even in a previous session, the “Input information” button will generate a pop-up window asking the user if they would like to retain the previously entered inputs or to reset all data to the default values. The default values are based on regression analysis of Medical Expenditure Panel Survey (MEPS) and other data; see the Technical Appendix for more details.



The “Show costs based on current inputs” button takes the user directly to the output screen using inputs currently in the calculator. If inputs are missing, a warning message is generated before returning the user to the main switchboard.

The “Clear current inputs” button clears all inputs in the calculator, resetting them to default values. The user must then proceed through the input screens and select from provided options or provide custom inputs to generate cost estimates.

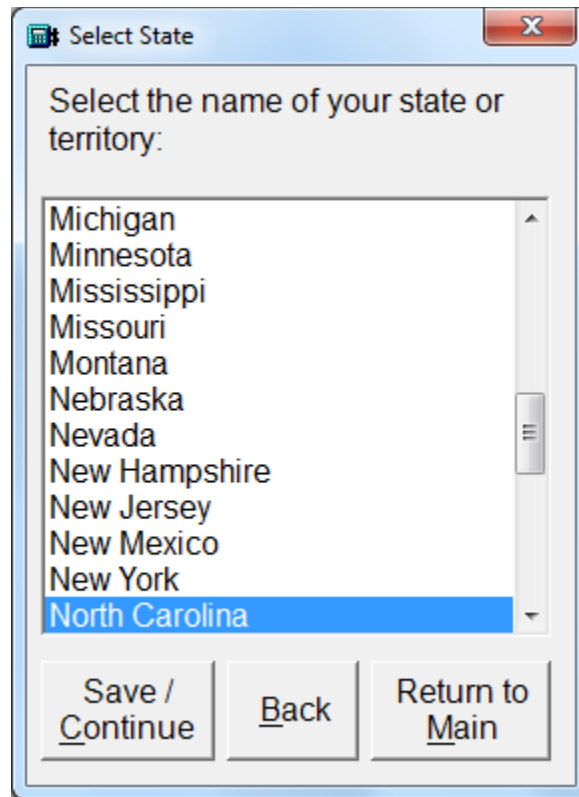
The “Load saved inputs from .mcc file” button opens a dialog window to let the user choose a .mcc file (“medical cost calculator”) of saved inputs from a previous session. Users can save the inputs entered for later use in the Chronic Disease Cost Calculator on the last screen (see below). Those .mcc files are available to load using this button. Once the file is selected, the calculator sets all inputs to those saved in that session.

To view the support documentation, the user can select the “View Calculator Introduction,” “View User’s Guide,” or “View frequently asked questions” buttons.

To exit the calculator, the user must return to the switchboard and hit the “Exit Calculator” button at the bottom. All inputs are saved and will be available in the next session.

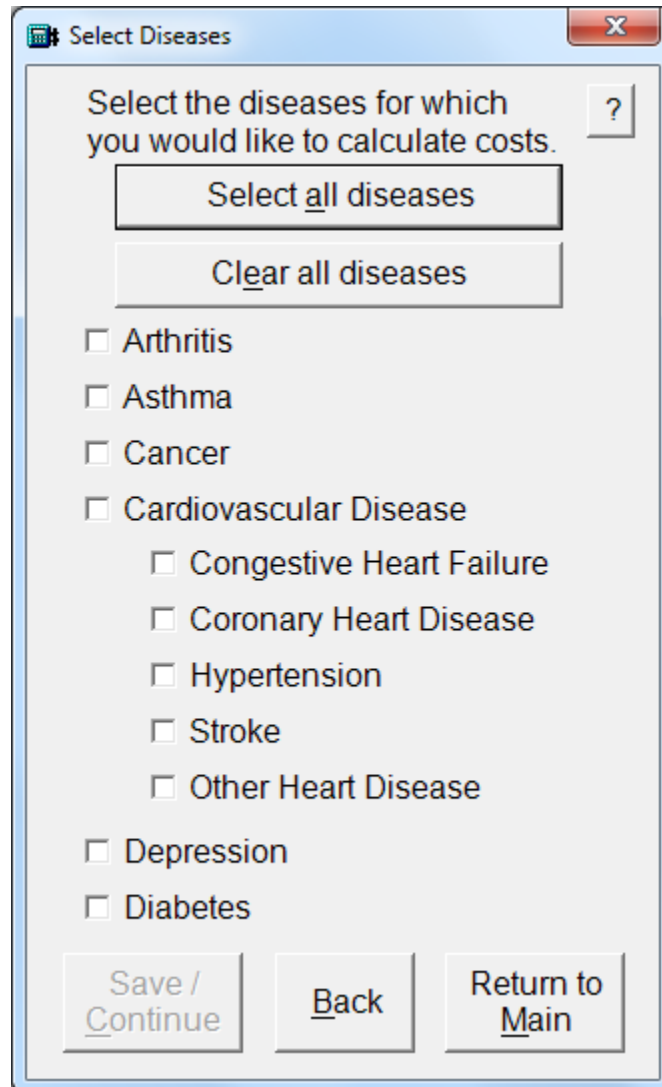
Selection of State

Users first select one state from a drop-down menu. All 50 states plus the District of Columbia are included.



Selection of Diseases

Next, the user selects the set of diseases for which they would like to calculate costs. The user can choose to generate estimates for any combination of the 10 chronic diseases (arthritis, asthma, cancer, CHF, CHD, hypertension, stroke, other heart disease, depression, and diabetes). The Cost Calculator reports costs for each selected disease as well as the sum of the costs across diseases.



The image shows a Windows-style dialog box titled "Select Diseases". It contains a text prompt "Select the diseases for which you would like to calculate costs." followed by a question mark icon. Below the prompt are two buttons: "Select all diseases" and "Clear all diseases". A list of 10 diseases follows, each with an unchecked checkbox: Arthritis, Asthma, Cancer, Cardiovascular Disease (which has three sub-items: Congestive Heart Failure, Coronary Heart Disease, and Hypertension), Stroke, Other Heart Disease, Depression, and Diabetes. At the bottom are three buttons: "Save / Continue", "Back", and "Return to Main".

Select Diseases

Select the diseases for which you would like to calculate costs. ?

Select all diseases

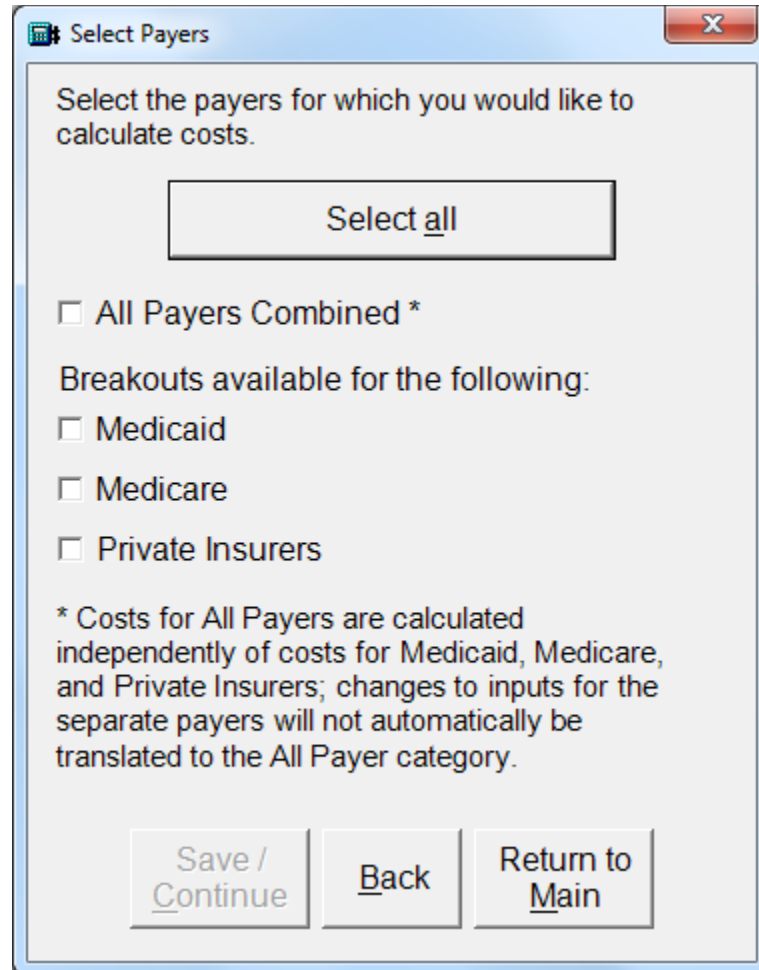
Clear all diseases

- ☐ Arthritis
- ☐ Asthma
- ☐ Cancer
- ☐ Cardiovascular Disease
 - ☐ Congestive Heart Failure
 - ☐ Coronary Heart Disease
 - ☐ Hypertension
- ☐ Stroke
- ☐ Other Heart Disease
- ☐ Depression
- ☐ Diabetes

Save / Continue Back Return to Main

Selection of Payers

Next, the user selects the set of payers for which they would like to calculate costs. The user can choose to generate estimates for any combination of the 4 payers: Medicaid, Medicare, private insurers, and all payers combined. All payers combined includes Medicaid, Medicare, private insurers and all other payers: out of pocket (including the uninsured), Veteran's Administration, TRICARE, other federal sources, other state and local sources, worker's compensation, other private, other public, and other unclassified sources. User inputs for all payers combined are independent of user inputs for Medicaid, Medicare, and private insurers.



Select Payers

Select the payers for which you would like to calculate costs.

Select all

☐ All Payers Combined *

Breakouts available for the following:

☐ Medicaid

☐ Medicare

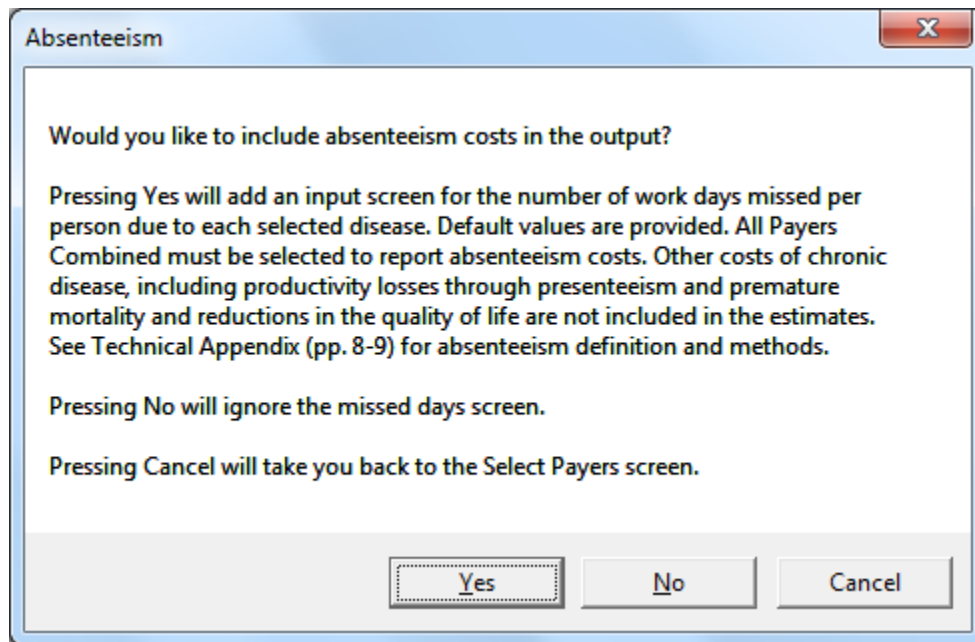
☐ Private Insurers

* Costs for All Payers are calculated independently of costs for Medicaid, Medicare, and Private Insurers; changes to inputs for the separate payers will not automatically be translated to the All Payer category.

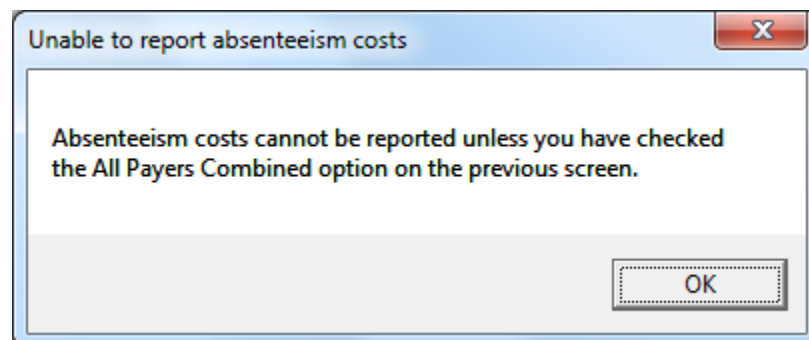
Save / Continue Back Return to Main

Reporting Absenteeism

Next, the user chooses whether or not to report costs from days of work missed due to illness (absenteeism). If the user chooses to report absenteeism, the user will be required to input the number of work days missed per person due to each selected disease in a later screen (default values are provided; see p. 18 below). If the user chooses not to report absenteeism, there will not be an input screen for number of work days missed.

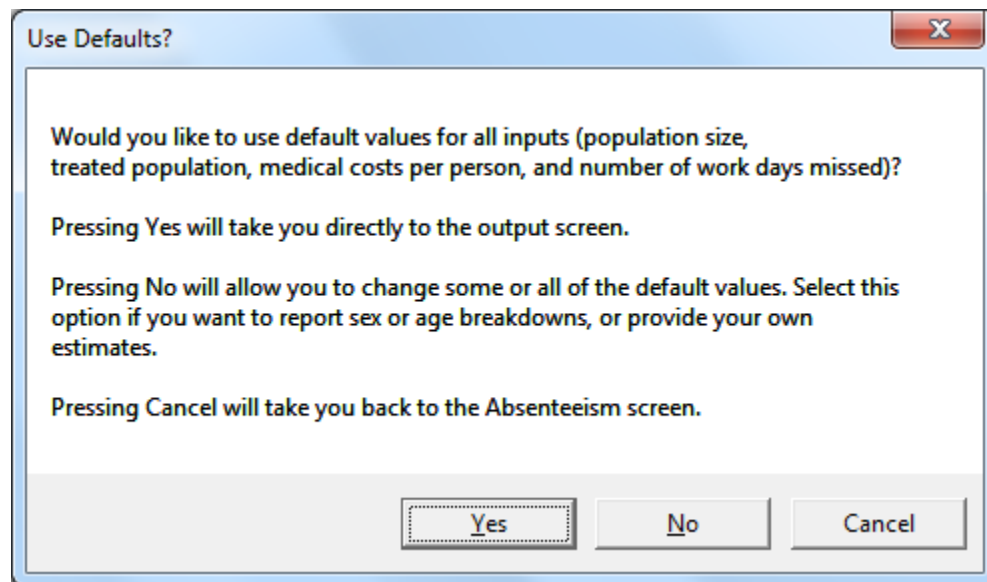


Absenteeism costs accrue to society (i.e., employers and employees) rather than to insurers. Therefore, if the user wishes to report absenteeism they must also select "all payers combined" from the payers screen so that inputs for the general state population can be used for absenteeism as well. If the user had not selected "All Payers Combined" before selecting to report absenteeism, the calculator will direct the user back to the payer selection screen where the user can select "all payers combined."



Use of Default Inputs

Next, the user chooses whether or not to use default values for all inputs (population size, treated population, medical costs per person, and number of work days missed). The default values are based on regression analysis of Medical Expenditure Panel Survey (MEPS) and other data. Please see the Technical Appendix for a detailed description of the default inputs. If the user chooses to use the default values, they will be taken to the output screen. If the user chooses to enter their own values for any of the inputs, they will proceed to a series of input screens.



Population Size

The following screen provides default values for the population size by payer in the state, which the user can change. At the top of the screen, each selected payer has a tab, which can be brought to the foreground by clicking with the mouse. To generate cost estimates by sex or by age categories, the user should check the appropriate box. The percentage of the population in each subpopulation should also be entered. Default values are provided for these inputs as well. If the user does not want to use the default values, new values between 0 and 100 can be entered into the white cells. The gray cells will be automatically calculated based on the values in the white cells.

To change any of the default values in the calculator, the user must uncheck the box underneath the default value and type over the default value (now in black text instead of gray). The default values will be reported next to the field for guidance. For example, as seen in the screen capture below, “55.0” was entered for the percent of the Medicaid population that is female and the total Medicaid population is set to use the default data.

For help throughout the calculator, the user can click on the “?” boxes on the right. Pop-up windows will provide information about data sources, definitions, and how to enter data.

The screenshot shows a web-based calculator titled "Population size in your state". It features a tabbed interface with four tabs: "All Payers", "Medicaid", "Medicare", and "Private Insurers". The "Medicaid" tab is currently selected. Below the tabs, there is a text box for "Total Medicaid population (including children)". A checkbox labeled "Use value from CMS." is checked, and the value "1,785,086" is entered in the adjacent text field. Below this, there is a checkbox labeled "Yes, I want to calculate chronic disease costs by sex." which is also checked. Underneath, a section titled "Percent of Medicaid population that is:" contains two rows. The first row is for "Female", with a checkbox "Use values from CPS." unchecked, a text field containing "55", and a percentage sign followed by the text "(CPS 2007-2009 reports 53.3% for NC)". The second row is for "Male", with a text field containing "46.7" and a percentage sign. At the bottom of the form, there is a checkbox labeled "Yes, I want to calculate chronic disease costs by age group." which is unchecked. At the very bottom of the window, there are three buttons: "Save / Continue", "Back", and "Return to Main".

Population size in your state

In order to estimate the cost of chronic disease to each payer, the calculator needs the total population size in your state. In addition, if you would like to calculate costs by gender or by age group, indicate so below and estimate the proportion of the payer population in the relevant categories. Default estimates are provided from the Current Population Survey (CPS), Centers for Medicare and Medicaid Services (CMS), and Kaiser Family Foundation (KFF).

All Payers | **Medicaid** | Medicare | Private Insurers

Total Medicaid population (including children)

☒ Use value from CMS. 1,785,086

☒ Yes, I want to calculate chronic disease costs by sex.

Percent of Medicaid population that is:

☐ Use values from CPS. Female 55 % (CPS 2007-2009 reports 53.3% for NC)

Male 46.7 %


☐ Yes, I want to calculate chronic disease costs by age group.

Save / Continue Back Return to Main

Treated Population

The next screen asks the user to provide estimates of the treated population for each disease selected among persons covered by selected payers in the state. The treated population is defined as the number of people receiving care for the disease in the previous year. Each payer, and all the diseases included within each payer, has a separate tab that can be brought to the foreground by clicking the tab. The user can choose to use default rates for each desired subpopulation or to enter their own estimates. If sex or age subpopulations are desired, the user must enter percent treated for those subpopulations; the percent treated among the entire payer population will then be calculated. Children (i.e., ages 0 to 17) were assumed to have zero percent treated for all diseases except asthma and depression. Please see the Technical Appendix for a detailed description of the default treatment rates and their relation to those available in other data sources.

Census region is the most detailed geographic data available (see the Technical Appendix). Treated population is calculated separately by region, region/age category, and region/sex where sample sizes permit. Where sample sizes are too small (i.e., the relative standard error of predicted percent treated was greater than 30%; see Technical Appendix), percent treated from the national level by sex or by age is used. In cases where sample sizes are too small even at the national level for estimates by sex or age, the calculator will not report output by these subgroups.


Population treated for chronic diseases in your state

In order to estimate the cost of chronic disease to each payer, the calculator needs the population treated for each disease among persons in your state. In addition, if you indicated on one of the earlier forms that you would like to calculate costs by gender or by age group, you will need to estimate the treated population within the relevant categories. Default estimates are provided from the 2004-2008 Medical Expenditure Panel Survey (MEPS) and 2004 National Nursing Home Survey (NNHS). Treated population is defined as the number of people receiving case for the disease in the previous year.

All Payers
Medicaid
Medicare
Private Insurers

Arthritis
Asthma
Cancer
CHF
CHD
Hypertension
Stroke
Other Heart Disease
Depression

Percent treated for asthma among entire Medicaid population

☒ Calculated based on treated population by sex.

8.2

%

Percent treated for asthma by sex

☒ Uses averages (by sex) from MEPS. Uncheck this box to enter your own values.

Females

8.0

%

Males

8.3

%

Save / Continue

Back

Return to Main

Costs per Person

Next, for each payer and disease selected, a tab provides estimates of the average annual payer costs per person attributable to the disease. These numbers represent the extent to which payer expenditures per person with the disease would be lower in the absence of the disease, all else constant. The Technical Appendix describes in detail the generation of the per-person cost estimates.

The user may adjust the cost inputs from their default values to obtain customized total cost estimates. *However, we strongly encourage all users to choose the default values provided unless they have conducted rigorous analysis of appropriate data similar to that described in the Technical Appendix.*

The screenshot shows a web-based calculator titled "Cost per person with chronic disease in your state". It includes a detailed instruction paragraph at the top, followed by tabs for "All Payers", "Medicaid", "Medicare", and "Private Insurers". The "Medicaid" tab is active, and within it, a row of disease tabs includes "Asthma", which is selected. Below the tabs, there are two main input sections. The first section, "Medicaid cost for treating asthma per person with asthma among entire Medicaid population", has a checked checkbox for "Calculated based on cost per person and treated population by sex" and a text input field showing "\$ 2,010". The second section, "Medicaid cost for treating asthma per person with asthma by sex", has a checked checkbox for "Uses averages (by sex) from MEPS. Uncheck this box to enter your own values." and two text input fields: "Females" with "\$ 2,330" and "Males" with "\$ 1,640". Each of these fields has a small "?" icon to its right. At the bottom of the form are three buttons: "Save / Continue", "Back", and "Return to Main".

In order to estimate the cost of chronic disease to each payer, the calculator needs the average cost for treating each disease per person in your state. In addition, if you indicated on one of the earlier forms that you would like to calculate costs by gender or by age group, you will need to estimate cost values within the relevant categories. Default estimates are provided from the 2004-2008 Medical Expenditure Panel Survey (MEPS) and 2004 National Nursing Home Survey, inflated to 2010 \$. We strongly encourage all users to choose the default values provided.

All Payers | Medicaid | Medicare | Private Insurers

Arthritis | Asthma | Cancer | CHF | CHD | Hypertension | Stroke | Other Heart Disease | Depression

Medicaid cost for treating asthma per person with asthma among entire Medicaid population

☒ Calculated based on cost per person and treated population by sex. \$ 2,010

Medicaid cost for treating asthma per person with asthma by sex

☒ Uses averages (by sex) from MEPS. Uncheck this box to enter your own values.

Females \$ 2,330 ?

Males \$ 1,640 ?

Save / Continue Back Return to Main

Absenteeism

Next, if the user selected to report absenteeism costs, for each disease selected, a tab provides estimates of the average annual work days missed per person attributable to the disease. These numbers represent the extent to which work days per person with the disease would be lower if the person did not have the disease, all else constant. Because asthma and depression are prevalent among children, we assumed that working parents must also miss work on the days that their children miss school. The Technical Appendix describes in detail the generation of the absenteeism cost estimates. Note that estimates of work days missed are only entered for all payers combined because absenteeism costs are not estimated for individual payers.

The user may adjust the work days missed inputs from their default values to obtain customized absenteeism cost estimates. *However, we strongly encourage all users to choose the default values provided unless they have conducted rigorous analysis of appropriate data similar to that described in the Technical Appendix.*

Average number of work days missed per person with care for chronic disease in your state

In order to estimate the absenteeism cost of chronic disease, the calculator needs the average annual number of work days missed per person attributable to the disease in your state. In addition, if you indicated that you would like to calculate costs by gender or age group for All Payers, you will need to estimate work days missed within the relevant categories. Because asthma and depression are prevalent among children, we assumed that working parents must also miss work on the days that their children miss school. Default estimates are provided from the 2004-2008 Medical Expenditure Panel Survey (MEPS). We strongly encourage all users to choose the default values provided.

Arthritis | **Asthma** | Cancer | CHF | CHD | Hypertension | Stroke | Other Heart Disease | Depression

Work days missed due to asthma per person with care for asthma among entire population

☒ Uses overall averages from MEPS. Uncheck this box to enter your own values. ?

Save / Continue Back Return to Main

Calculated Costs

The results are organized under tabs for each payer, absenteeism, and a summary tab for all selected diseases and payers. For each payer, chronic disease and subpopulation selected, the model reports the following:

1. Summary of inputs, including the population size, treated population, and payer costs per person
2. Estimate of the total number of people treated for the disease
3. Estimate of the total annual payer costs attributable to the disease

Sums of the total costs across subpopulations may not equal the overall total costs due to rounding. The user can select to view results for each disease within payer by selecting the appropriate tab. There is also a tab for the sum of the payer costs for all selected diseases. However, the cost estimates for hypertension and diabetes include the costs of complications such as CHF, CHD, stroke and other heart disease. *The sum of costs over selected diseases that include hypertension and diabetes could overestimate the costs associated with all the selected diseases.* The Cost Calculator provides estimates for “Diseases of the Heart” and “Total CVD” that avoid double-counting of costs across diseases. The costs for “Diseases of the Heart” include CHD, CHF, and other heart disease. The costs for “Total CVD” include “Diseases of the Heart,” stroke, and an estimate of hypertension costs that avoids double-counting of costs with other diseases. In our analysis for the default estimates, excluding the costs of complications lowers the estimates for hypertension and diabetes by approximately 34% and 39%, respectively.

The tab for absenteeism reports, for each chronic disease and subpopulation selected, the following:

1. Summary of inputs including the population size, treated population, and work days missed per person
2. Estimate of the total number of persons with the disease
3. Estimate of the total number of persons working with the disease
4. Estimate of the total annual number of working days missed per year
5. Estimate of the total annual absenteeism costs attributable to the disease

Sums of the absenteeism costs across subpopulations may not equal the overall total absenteeism costs due to rounding. The user can select to view results for each disease by selecting the appropriate tab. There is also a tab for the sum of the absenteeism costs for all selected diseases. As stated above, *the sum of costs over selected diseases that include hypertension and diabetes could overestimate the costs associated with all the selected diseases.*

The summary tab reports the total payer costs for each payer and disease as well as the total absenteeism costs. Costs for all payers combined are calculated independently of costs for Medicaid, Medicare, and private insurers.

Calculated Costs

The calculated costs to your state for each disease are listed below. Note that user inputs (versus inputs based on averages from MEPS) are italicized. 'Insuf' represents inputs for which no value was entered and no default was available; outcomes based on those values are not calculated.

STATE North Carolina

All Payers
Medicaid
Medicare
Private Insurers
Absenteeism
Overall Summary
Medical Cost Projections

Arthritis
Asthma
Cancer
CHF
CHD
Hypertension
Stroke
Other Heart Disease
Depression
Diabetes
All sele

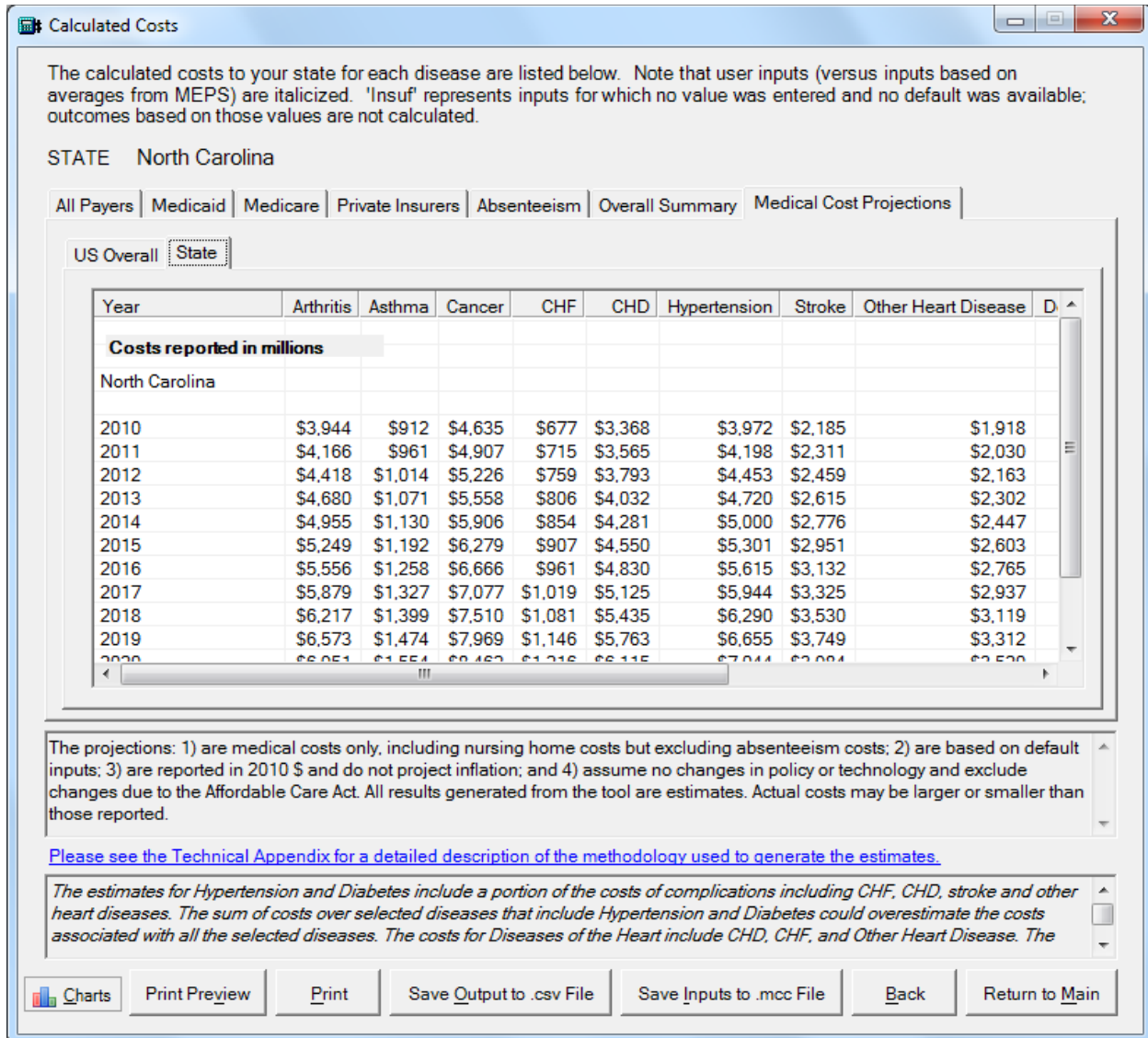
	MCD Pop	% Treated	MCD Treated Pop	Cost per person	Total costs
Total costs reported in millions					
US overall	58,238,773	8.1%	4,702,400	\$2,170	\$10,226
North Carolina					
Overall	1,785,086	8.2%	145,900	\$2,010	\$294
Males	803,289	8.3%	67,000	\$1,640	\$110
Females	981,797	8.0%	78,900	\$2,330	\$184

Annual expenditures inflated to 2010 \$ following recommendations from the Agency for Healthcare Research and Quality. Costs include expenditures for office based visits, hospital outpatient visits, emergency room visits, inpatient hospital stays, dental visits, home health care, vision aids, other medical supplies and equipment, prescription medicines, and nursing homes. Payer populations are not mutually exclusive. Costs for All Payers are calculated independently of costs for Medicaid, Medicare, and

[Please see the Technical Appendix for a detailed description of the methodology used to generate the estimates.](#)

Charts
Print Preview
Print
Save Output to .csv File
Save Inputs to .mcc File
Back
Return to Main

Users can view projections of the medical cost of the chronic diseases to all payers combined through 2020 by selecting the “Medical Cost Projections” tab (see screen shot on page 20). The projections: 1) are medical costs only, including nursing home costs[‡] but excluding absenteeism costs; 2) are based on default inputs; 3) are reported in 2010 \$ and do not project inflation; and 4) assume no changes in policy or technology and exclude changes due to the Affordable Care Act. All the changes in the real medical cost of disease are driven by growth in real medical costs and change in the treated population, which is in turn driven by changes in population size and age and gender distributions.



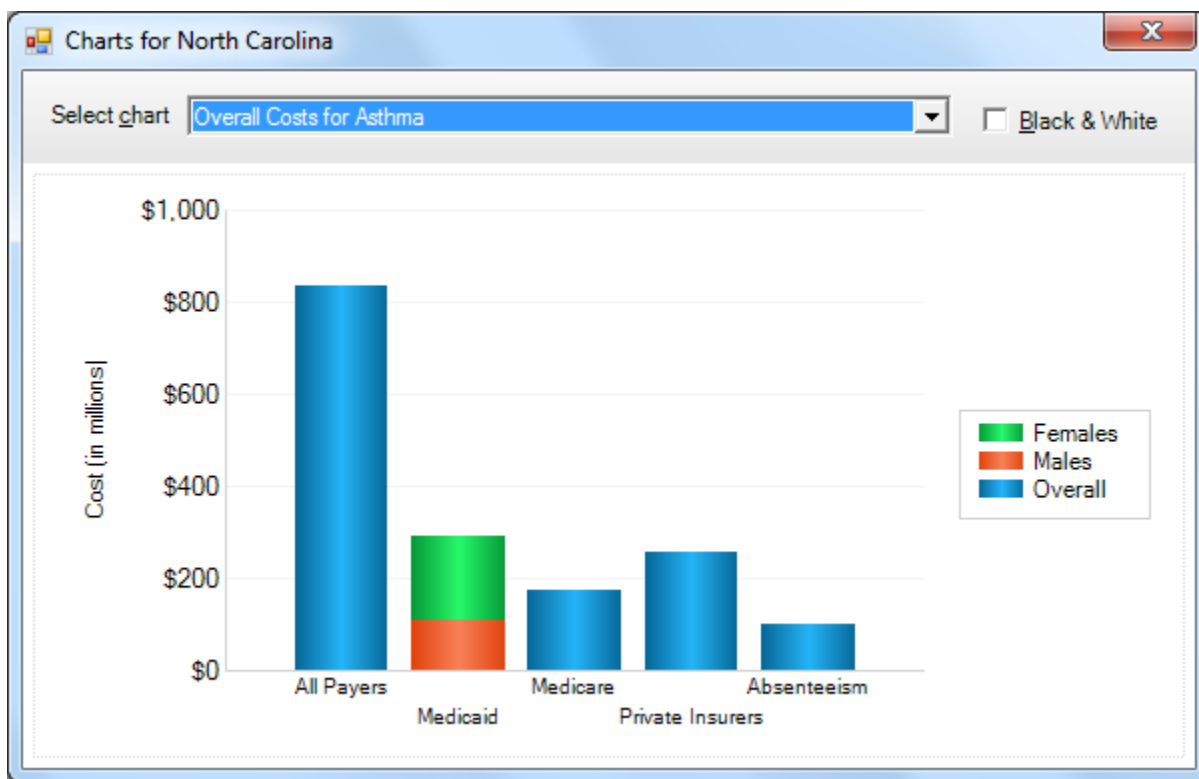
[‡] Private insurance is not a major payer for nursing homes so these costs were not estimated for private insurers.

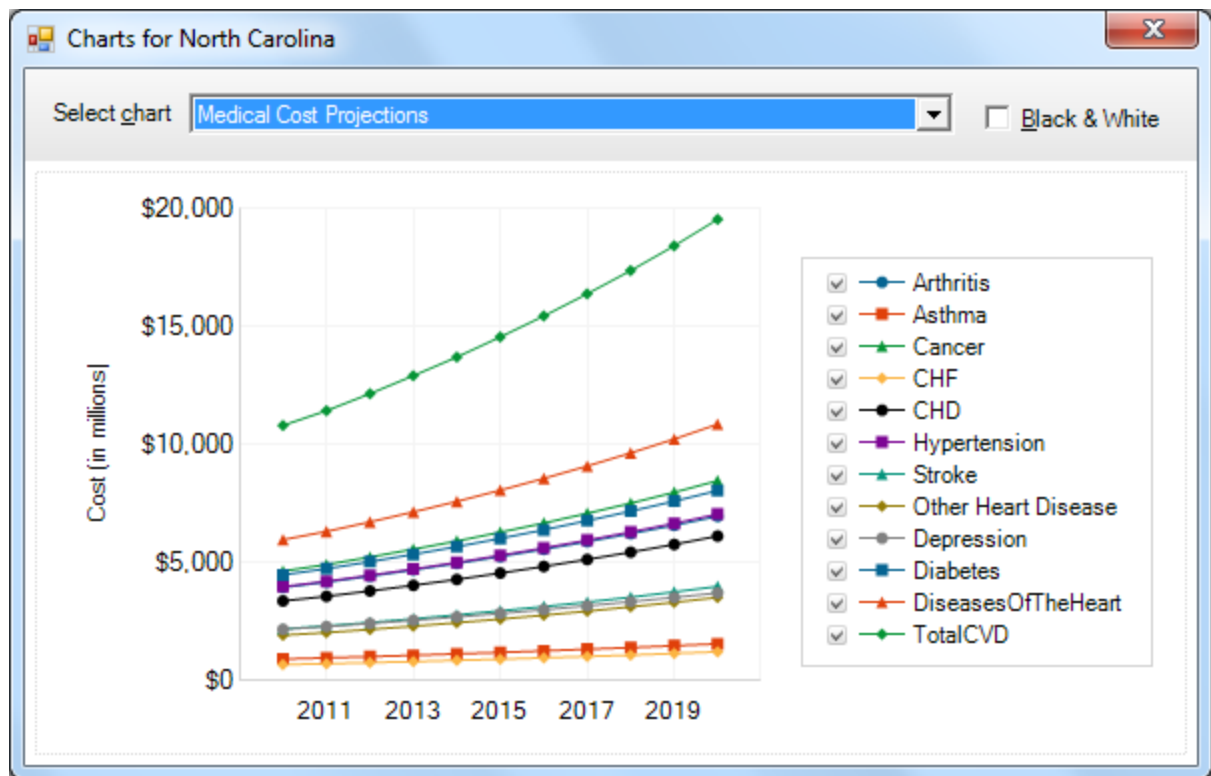
In addition to the tables described above, the Cost Calculator displays the information in graphical form by selecting the “Charts” button in the bottom right of the screen. The graphs automatically include the payer and disease categories selected by the user and can be viewed in color or black and white for printing.

Users can print a hard copy of the output by selecting “Print”; a “Print Preview” is also available. There are several ways users can print a sub-selection of the available tables. First, the “Print” button prints results for the selected payers and diseases. If the user wants to print a smaller set of results than those currently in the Cost Calculator, they can go through the Cost Calculator again and only select the payers and diseases they want to print. Second, users can print directly to a PDF file and then print selected pages from their PDF viewing software (e.g., Adobe Acrobat Reader). Finally, users could use the Print Screen button on their keyboards to print an exact copy of the Cost Calculator’s current screen view.

Users can save an electronic copy of output by selecting “Save Output to .csv File.” The file is saved as a comma-separated file and can be opened and edited in spreadsheet software such as Microsoft Excel. Users can save the inputs entered for later use in the Chronic Disease Cost Calculator by selecting “Save Inputs to .mcc File.” The .mcc file containing the user-defined inputs can be loaded into the calculator at the Main Switchboard.

All expenditure data were inflated to 2010 dollars using the gross domestic price deflator to make to reflect more current dollar values. All results generated from the tool are estimates. Actual results may be larger or smaller than those reported.





Glossary of Terms

Absenteeism: Absence from work. The Cost Calculator's primary measure of lost productivity is absence from work due to chronic disease.

Attributable: The portion of expenditures directly associated with a disease.

CHD: Coronary heart disease

CHF: Congestive heart failure

CVD: Cardiovascular disease

Per-person costs: Average payer costs per person with the disease attributable to the disease. These numbers represent the extent to which payer expenditures per person with the disease would be lower in the absence of the disease, all else constant.

Treated Population: The number of people receiving care for the disease in the previous year.

References

1. Hoffman C, Rice D, Sung HY. Persons with chronic conditions: their prevalence and costs. *JAMA* 1996;276 (18):1473-1479.
2. Roehrig C, Miller G, Lake C, Bryant J. National health spending by medical condition, 1996-2005. *Health Affairs* 2009;28(2):w358-w367.
3. Goetzel RZ, Hawkins K, Ozminkowski RJ, Wang S. The health and productivity cost burden of the top 10 physical and mental health conditions affecting six large U.S. employers in 1999. *J Occup Environ Med* 2003;45(1):5-14.